

Argand Plot

$$\frac{d\sigma}{d\Omega} = |f(\theta)|^2$$

where

$$f(\theta) = \frac{1}{k} \sum_{\ell} (2k+1) a_{\ell} P_{\ell}(\cos\theta)$$

with

$$a_{\ell} = \frac{\Gamma_{el}/2}{(E_R - E - i\Gamma_{tot}/2)}$$

This gives a circle in an Argand plot

with radius $\frac{\Gamma_{el}}{2\Gamma_{tot}}$

and center $\frac{i}{2} \frac{\Gamma_{el}}{\Gamma_{tot}}$

For elastic resonances $\Gamma_{el} = \Gamma_{tot}$,

radius is $1/2$; center $i/2$

and when $E = E_R$

$$a_{\ell} = i$$

P₀ J. 1/2



